

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 10 (Cancelled).

11. (New) A flowmeter having:

at least two ultrasonic transducers, which are mounted on a containment, through which a medium is flowing in a stream direction, wherein the ultrasonic transducers alternately send and receive ultrasonic measuring signals in, and against, the stream direction; and

a control/evaluation unit, which, on the basis of the travel time difference of the ultrasonic measuring signals propagating in, and against, the stream direction, determines and/or monitors the volume flow rate of medium in the containment, wherein:

said ultrasonic transducers are constructed such that they send and receive ultrasonic measuring signals, or sonic fields, with a large opening angle, i.e. a large beam spread.

12. (New) The flowmeter as claimed in claim 1, wherein:

said two ultrasonic transducers are arranged in a defined separation from one another, the separation of said two ultrasonic transducers being dependent only on the opening angle (γ) of ultrasonic measuring signals, or the sonic fields; and

the separation (L) of said two ultrasonic transducers is independent of other system- and/or process-parameters (w , cr , c , di).

13. (New) The flowmeter as claimed in claim 12, wherein:

a minimum separation of said two ultrasonic transducers is defined and is dimensioned such that the ultrasonic measuring signals, which are alternately sent from, and received by, said two ultrasonic transducers, in each case propagate along at least one sonic path in the containment through which the medium is flowing.

14. (New) The flowmeter as claimed in claim 13, wherein:

the minimum separation of said two ultrasonic transducers and the opening angle (γ) of the ultrasonic measuring signals, or sonic fields, is dimensioned such that the ultrasonic measuring signals propagate along at least two sonic paths, which differ in the number of traverses, wherein a traverse defines the section of a sonic path, along which an ultrasonic measuring signal crosses once through the containment.

15. (New) The flowmeter as claimed in claim 14, wherein:

said control/evaluation unit, on the basis of the travel time of the ultrasonic measuring signals, which propagate along at least two different sonic paths in, and against, the stream direction in the containment through which the medium is flowing, calculates at least one of the system- or process parameters necessary for determining the volume flow rate of the medium in containment.

16. (New) The flowmeter as claimed in claim 15, wherein:

the at least one system- or process parameter is the inner diameter of the containment, the wall thickness of the containment, the velocity of sound in the material of which the containment is fabricated, or the velocity of sound in the medium.

17. (New) The flowmeter as claimed in claim 11, wherein:

each of said two ultrasonic transducer has at least one piezoelectric element as a sending- and/or receiving element.

18. (New) The flowmeter as claimed in claim 17, wherein:

said piezoelectric element is a disc-shaped piezoelectric element, with which an acoustic diverging lens or an acoustic lens is associated for the purpose of beam spreading.

19. (New) The flowmeter as claimed in claim 17, wherein:

multiple piezoelectric elements are provided as sending- and/or receiving elements, wherein the sending- and/or receiving elements are arranged in an array.

20. (New) The flowmeter as claimed in claim 19, wherein:

said control/evaluation controls said piezoelectric elements in the array such that the predetermined beam spread, i.e. the desired opening angle, is achieved.